

5090
Ser 1811RP/L2023

23 OCT 1991

From: Commander, Western Division, Naval Facilities Engineering Command
To: Distribution

Subj: WATER QUALITY INVESTIGATION OF STORMWATER DRAINAGE,
NAVAL STATION, TREASURE ISLAND, HUNTERS POINT ANNEX

Encl: (1) Response to comments on Subject Document

1. In accordance with the Federal Facility Agreement for Naval Station, Treasure Island, Hunters Point Annex, enclosure (1) is forwarded in response to comments generated during the review of the subject document.
2. Should you have any questions regarding this matter, the point of contact is Commander, Western Division, Naval Facilities Engineering Command (Attn: Louise T. Lew, Code 1811, (415) 244-2551).
3. By copy of this letter, this document is also being provided to other concerned regulatory agencies.

original signed by

MICHAEL A. MIGUEL
By direction

Distribution:

U.S. Environmental Protection Agency (Attn: Ms. Roberta Blank)
Department of Toxic Substances Control (Attn: Bill Brown)
Regional Water Quality Control Board (Attn: Steve Ritchie)

Copy to:

Bay Area Air Quality Management District (Attn: Scott Lutz)
California Department of Fish & Game (Attn: Mike Rugg)
U.S. Fish & Wildlife Service (Attn: Steve Schwarzbach)
National Oceanic & Atmospheric Administration (Attn: Mike Buchman)
Hunters Point Technical Review Committee Public Member (Attn: Rev. Arelious Walker)
City and County of San Francisco (Attn: David Wells)
San Francisco District Attorney (Attn: Steve Castleman)
Bay Conservation and Development Commission (Attn: Nancy Wakeman)
U. S. Department of the Interior (Attn: Bill Allen)
Blind copy to: (w/o encl) 09B, 09CPB, 09A2A, 24, 1811, 1811RC
HLA (Attn: Ashook Verma), PRC (Attn: Gary Welshans), PWC S.F. Bay (Code 420)
(w/encl) Admin Record (4 copies), COMNAVSEASYSOM (Attn: Robert Milner), 1811RP
COMNAVBASE S.F. WRITER: RICHARD POWELL, CODE 1811RP, X2555
OIC Treasure Island HPA: TYPIST: M. MARSHALL, 17 Oct 91 Stormwater/L2023\
NAVSTA Treasure Island FILE: HPA

NAVY RESPONSES TO EPA COMMENTS

The following are United States Environmental Protection Agency (EPA) comments on the draft *Water Quality Investigation of Stormwater Drainage, Naval Station, Treasure Island, Hunters Point Annex*, presented in their letter dated September 3, 1991, and the Navy's responses.

General Comment #1:

Our review indicates that this submittal provides a generally complete and understandable presentation of the data collected during sampling of stormwater drainage. One major technical deficiency is present due to the poor quality of the analytical data. Many analytical results have been qualified either as estimated or as otherwise less than fully usable. The statement on Page 27 that "the data appear to be accurate and of good quality with some minor exceptions" seems to be an overstatement.

Response:

The process of analytical data review and data validation using the EPA Functional Guidelines criteria (*Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*, EPA 1988a, and *Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses*, EPA 1988b) inevitably leads to the qualification of some data as either estimated (J qualifier) or rejected (R qualifier). The presence of qualifiers and qualified data does not necessarily imply "poor quality". Estimated data is usable for risk assessment (*Risk Assessment Guidance for Superfund*, Volume I, EPA, 1989, Section 5-12, and *Guidance for Data Useability in Risk Assessment*, EPA 1990) and is considered to be of high enough quality to be used for interpretation. Unacceptable or rejected data are unusable for risk assessment. The occasions where data had to be rejected were infrequent. In some cases, data may be qualified due to factors outside control of the chemical analyst. For example, because of matrix effects, poor matrix spike recovery may result and require "J" qualifiers to be added to data. This situation leads to qualified data but not "poor quality" data.

Although the data is qualified, we do not feel the data is of poor quality. We recommend that the statement on Page 27 "the data appear to be accurate and of good quality with some minor exceptions" remain in the report unchanged.

General Comment #2:

The qualified data do not invalidate the conclusions that the stormwater drainage is a source of contaminants to San Francisco Bay, but the full scope of the problem may not have been adequately characterized. The recommendations on Page 33 of the submittal may be limited based on the

assumption that stormwater drainage may be included in other planned investigations. If this is not the case, a stronger recommendation to confirm the results of this study and characterize the extent of contamination would be appropriate.

Response:

The Navy agrees that this investigation does not constitute a full characterization of the storm drain system. A more complete and comprehensive study of the water and sediment quality of the storm drain system will be performed as part of a facility-wide storm drain, sanitary sewer, and underground utility investigation. A work plan for this investigation is being prepared. Additional sampling, chemical analysis of storm drain water and toxicity testing of storm drain water, will also be conducted as part of the Environmental Sampling and Analysis Plan (ESAP). Since these activities are already in progress, we recommend that the recommendations included in the stormwater quality investigation report remain unchanged.

Specific Comment #1:

Page 3, Section 2.2, Paragraph 1. The sentence discussing sampling locations is confusing. The information might be clearer if it was split up into two separate sentences.

Response:

The text should read as follows, "Samples were collected from six locations specified by the San Francisco Bay Regional Water Quality Control Board (RWQCB), including two storm drain manholes, two surface drainage rivulets, and two ponded areas. Samples were collected from each of these locations during two storm events."

Specific Comment #2:

Page 14, Section 4.3.2, Paragraph 3. The procedure used to calibrate the electrical conductivity meter is not explained in sufficient detail. Specifically, at what interval during sampling was the meter recalibrated?

Response:

The meter calibration was verified with a known conductivity standard and adjusted before every measurement using the instrument's internal calibration feature (the "redline"). Twelve hours prior to the storm event and within the first hour of the storm event, the meter's calibration was verified with standards of known ionic strength.

Specific Comment #3:

Page 15, Section 5.1, Paragraph 2. The section would be helped if the reason for the use of Stormdrain SW1a for conductivity measurements during the light precipitation event on 10/31/90 was included here. It should also be stated, either here or in section 7 that it is not expected that this inconsistency would have more than a minimal effect on the results.

Response:

Station SW1a was mistakenly used instead of station SW1 on October 31, 1990. The close proximity of station SW1 and SW1a makes the two stations essentially identical with regard to the field observations made following the light rain on October 31, 1990. The text should read as follows: "Stormdrain station SW1a located 10 feet away and upgradient from station SW1 was mistakenly used on October 31, 1990. Station SW1a displayed an electrical conductivity of 230 umhos/cm, suggesting that fresh water displaces the saline bay water during minimal storm events. The close proximity of station SW1 and SW1a makes these two stations essentially identical in terms of their hydraulic characteristics and this inconsistency is expected to have a minimal effect on the results."

Specific Comment #4:

Page 17, Section 5.2.1. There is a discrepancy between the text and the data presented in Table 5. The table lists the results for Toluene at Station SW4 as 600 $\mu\text{g/kg}$ whereas the text lists it as 1,900 $\mu\text{g/kg}$. The incorrect number should be corrected.

Response:

The text is incorrect and should read as follows "... toluene (600 $\mu\text{g/kg}$)."

Specific Comment #5:

Page 18, Section 5.2 and 5.3. The report would benefit from a more thorough discussion of the parameters found. At a minimum, it should always be clear which constituents were found, and at which sampling locations.

Response:

The intent of sections 5.2 and 5.3 is to present the results of the investigation and not a thorough discussion of the parameters found. A summary and discussion is found in section 7.0. Each subsection in sections 5.2 and 5.3 presents which constituents were found and at which sampling location, with the exception of the CLP metals results. Because of the numerous detections of metals at each station, the CLP metals results are presented in terms of ranges observed from the four sampling locations. A description of the station-specific CLP metals results appear in Tables 6 and 10 and again in summary form in Tables 14 and 15.

Specific Comment #6:

Page 18, Section 5.2.7, Paragraph 5. The section would be clearer if the WET results were given a separate section. It would also be useful if the results of the WET analysis were presented, even though they are below the state standards. This would allow comparison with the metals results in the other sections.

Response:

It is agreed that the WET results should have been presented in a separate section. The WET analysis results are presented in Table 7.

Specific Comment #7:

Page 21, Section 5.3.10. There is a discrepancy between the text and the data presented in Table 10. The table lists the results for Hexavalent chromium at Stations SW1 and SW3 as 43 $\mu\text{g/l}$ and 27 $\mu\text{g/l}$, respectively, whereas the text lists them as 0.043 $\mu\text{g/l}$ and 0.027 $\mu\text{g/l}$, respectively. The incorrect information should be corrected.

Response:

The text should read as follows ". . . 43 $\mu\text{g/l}$ and 27 $\mu\text{g/l}$. . ."

Specific Comment #8:

Page 21, Section 5.4.1, Paragraph 1. Either the reference to Plate 1 should be deleted, or preferably, the three weather station locations should be added to the plate.

Response:

The correct reference should have been to Plate 2, not Plate 1.

Specific Comment #9:

Page 21, Section 5.4.1, Paragraph 1. Plates 3 and 4 indicate that a significant rainfall event (e.g. >0.3") occurred on December 10th. If the plates are incorrect, they should be changed. Otherwise, the text should be corrected to accurately reflect what occurred, and its significance should be discussed.

Response:

The text should read as follows: "Plate 3 indicates that the storm sampled on December 15, 1990, was the second significant event (e.g. greater than 0.3 inches of rainfall) of the season and that the precipitation values measured at HPA PG station are comparable to the observations at the nearby National

Weather Service sites." The storm event on December 10, 1990, was not sampled because it was expected by local weather forecasters to produce only trace amounts of rain below the 0.3-inch criteria. By the time it was recognized that the storm was producing rainfall above the criteria, mobilization of the sampling crew and equipment to sample the entire event was not feasible. Although the storm on December 15, 1990, was not the first significant event of the season, sampling during the storm fulfilled the study objective (p. 5) of sampling a "representative major rainfall event."

Specific Comment #10:

Page 23, 24, & 25, Section 5.4.2.7 .8 and .11. As stated above, the report would benefit from a more thorough discussion of the parameters found. At a minimum, it should always be clear which constituents were found in which sampling locations.

Response:

As stated above in the response to Comment #5, the intent of Section 5.4 is to present the results and not a thorough discussion of the parameters found. The summary and discussion is found in Section 7.0. Because of the numerous detections of CLP metals, pH, and anions at each station, the results for these parameters are described in general terms of concentration ranges observed from all four sampling stations to minimize cumbersome language. Station-specific chemical concentrations appear in Table 15 and again in summary form in Table 16.

Specific Comment #11:

Table 5. A value is used and reported for Pyrene at SW4, but the data is given a "U" qualifier. Correct the information that is in error.

Response:

The "U" qualifier is incorrect; pyrene was detected. The "U" qualifier should be changed to an "A" (acceptable) qualifier.

Specific Comment #12:

Table 10 & 13. The Tables would be clearer if the first set of metals results were labeled soluble.

Response:

It is agreed that the first set of metals results on Tables 10 and 13 should have been identified as soluble.

Specific Comment #13:

Page 30, Section 7.0, Paragraph 5. The data for water depth at SW2 and SW3 indicates that the water depth did not follow a constant trend during the sampling event. The text should either describe more accurately the trends followed, or simply list it as variable.

Response:

The text should have read that the depth to water at Stations SW2 and SW3 fluctuated during the sampling event.

NAVY RESPONSES TO DTSC COMMENTS

No general or specific comments requiring the Navy's response were stated in the Department of Toxic Substance Control (DTSC) comments on the draft *Water Quality Investigation of Stormwater Drainage Naval Station, Treasure Island, Hunters Point Annex*, presented in their letter dated August 29, 1991.

NAVY RESPONSES TO RWQCB COMMENTS

The following are comments from the San Francisco Bay Regional Water Quality Control Board (RWQCB) on the draft *Water Quality Investigation of Stormwater Drainage, Naval Station, Treasure Island, Hunters Point Annex*, presented in their letter (dated October 15, 1991) and the Navy's responses.

General Comment #1:

In general, the purpose of the study was to characterize what goes into San Francisco Bay from the storm drains at Hunters Point Annex (HPA). This report is a data summary and does not place the information provided into a context in which to evaluate it. The conclusions reached, as presented in the report, were not supported by the data analysis.

Response:

The primary objective of this report was to characterize the water and sediment quality of stormwater runoff from Hunters Point Annex. The scope of the investigation did not include extensive data analysis or interpretation nor an evaluation of the context of the data, e.g., whether or not the water and/or sediment chemistry exceeded various regulatory criteria and standards. As additional data on water/sediment quality and toxicity is obtained in the Environmental Sampling and Analysis Plan (ESAP) and in the facility-wide storm drain, sanitary sewer, and underground utility investigation (work plan in preparation), a more comprehensive picture of the storm drain system will emerge. When that information is available, it will be appropriate to summarize the context of the stormwater drainage and perform more extensive data analysis and interpretation.

Specific Comment #1:

Some attempt should have been made to relate the content of contaminants found in various media to sediment and water concentrations known to have toxic effects, both chronic and acute. That information is available in several forms, including EPA water quality criteria and NOAA Status and Trends Reports, such as NOS OMA 52.

Response:

The intent of this report was not to assess the toxicity of the storm drain water and sediment nor to compare the results to EPA water quality criteria or to the NOAA Status and Trends Report. The ESAP will address the toxicity of the stormwater drainage. See also the response to the general comment.

Specific Comment #2:

No attempt was made to address the issue of whether "pre-event conditions" were similar to or different than "event" conditions and whether "runoff" conditions influenced the content of storm drain samples.

Response:

A brief discussion of differences between pre-event, event, and runoff sample water quality was presented on Pages 30 and 31 or Section 7.0. Again, extensive data analysis and interpretation were not within the scope of the investigation.

Specific Comment #3:

The study clearly shows that water entering the storm drain system after a period of as little as five days was polluted with levels of zinc, copper, lead and chromium that exceeded proposed shallow water effluent limitations for toxic substances. The question remains as to what to do about it.

Response:

Comment acknowledged. It is unclear what is meant by the statement "The study clearly shows that water entering the storm drain system after a period of as little as five days was polluted. . .". The storm water runoff and storm drain samples collected on December 15, 1990, were collected contemporaneously with the rainfall event and largely represent runoff water from this event rather than runoff from the previous storm on December 10, 1990.

Specific Comment #4:

The conclusions that the accumulated sediments present in the storm drains represents the primary source of potential contamination to the Bay is unfounded. The concentrations of soluble and total metals in the runoff were sufficient, alone, to cause concern. There were not statistical tests performed nor was data presented in such a fashion as to lead the reader to this conclusion.

Response:

Based on the results of this study, it is clear that the highest number of detections and chemical concentrations for both organic and inorganic parameters was for the accumulated sediments rather than surface water runoff flowing into the storm drain. As a result it was qualitatively concluded that sediments or more specifically, entrained particulates, within the drains may represent the primary source of potential contamination rather than the runoff water. Further sampling and data analysis (including statistical tests) beyond the scope of this study may be required to confirm this conclusion.

Specific Comment #5:

Using a statistical approach, such as principal components analysis, one could determine which of the metals were responding similarly and whether the metals in the runoff were similar to those found in the storm drain and in pre-event sediment and water samples.

Response:

Comment acknowledged. No complex statistical comparisons were proposed for this study.

Specific Comment #6:

The titles of the Tables in the text should be the same as the title listed in the appendix, e.g., is Table A1 the same as Table 1A?

Response:

"Table" 1A is a standard report form for CLP data. Table A1, following Section A.7.0, Laboratory QC Data Report Forms, is found at the end of the document.

Specific Comment #7:

The tables should state that the results are expressed on the basis of dry weight. Tables should be able to "stand alone" with respect to the information they present.

Response:

Comment acknowledged. All sediment data presented in the tables are reported on a dry weight basis, as required by the Contract Laboratory Program (CLP) protocols.

Specific Comment #8:

Information, such as the type of soil used for VBLK1 soil, is important and should be included in the appendices because it may relate to QA/QC issues, for example poor matrix spike recoveries or the use of a soil to evaluate sediment samples.

Response:

The CLP protocol states that a "purified solid matrix" will be used as a method blank for soil/sediment analysis. The VBLK1 sample is this soil method blank; the sample is "Ottawa sand" purchased by the laboratory from Fisher Scientific.

Specific Comment #9:

Present the concentrations of "major" contaminants, e.g., Cu, Ni, Pb, Cd, As, as time courses to determine if there is a relationship between the runoff and what shows up in the storm drain water samples.

Response:

Comment acknowledged. Complex data analysis and interpretation were not a part of the scope of this investigation.